DMICC:
Management Studies

Treatment Algorithm for the Management of Type 2 Diabetes

Diagnosis → **Lifestyle interventions + metformin**

No — **A1C ≥ 7%** — **Yes***

Add basal insulin - most effective

Add sulfonylurea - least expensive

Add glitazone - no hypoglycemia

No — **A1C ≥ 7%** — **Yes***   **No** — **A1C ≥ 7%** — **Yes***   **No** — **A1C ≥ 7%** — **Yes***

Intensify insulin   **Add glitazone[†]**   **Add basal insulin**   **Add sulfonylurea[†]**

No — **A1C ≥ 7%** — **Yes***

No — **A1C ≥ 7%** — **Yes***   **Add basal or intensify insulin**

Intensive insulin + metformin ± glitazone
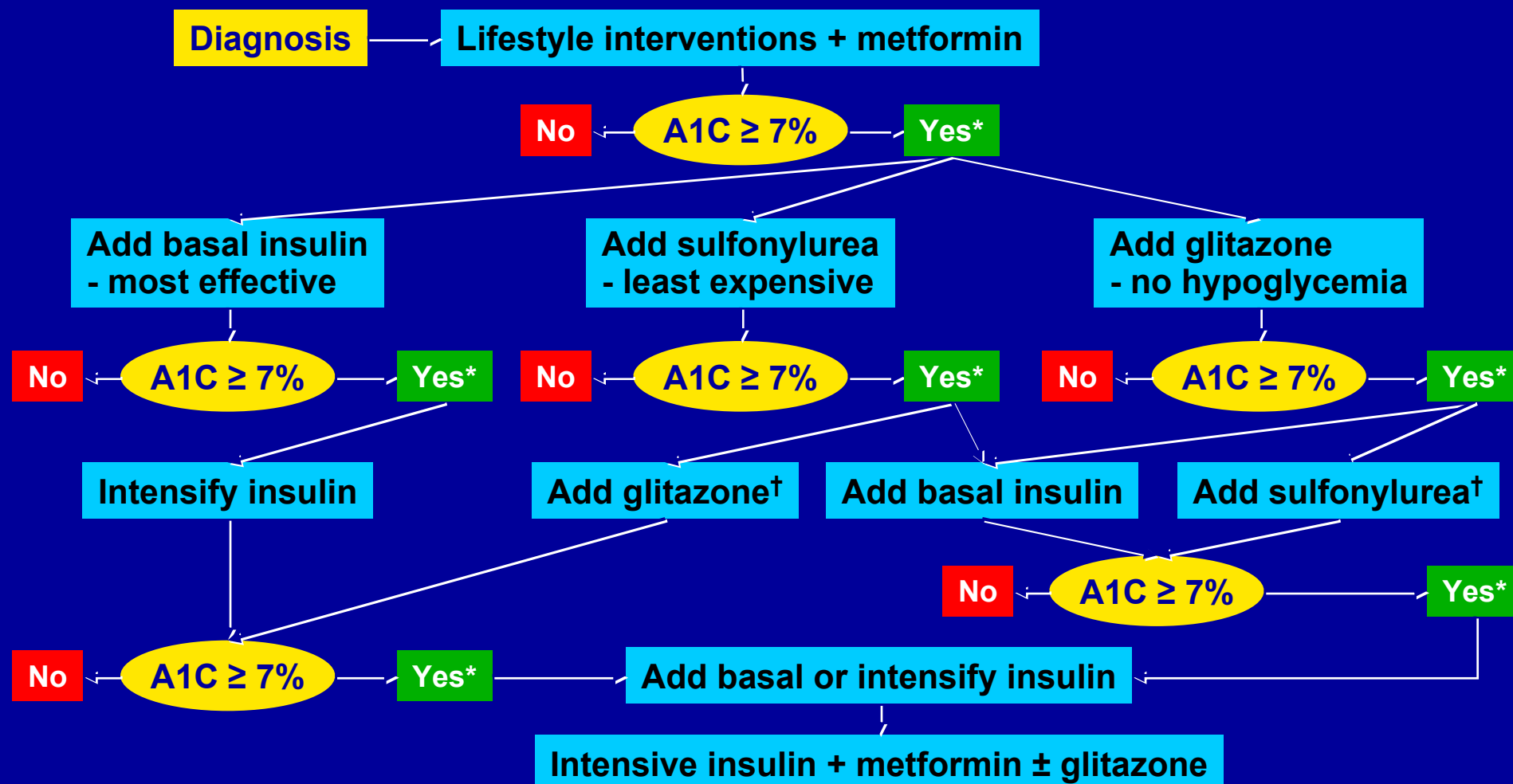
Reinforce lifestyle intervention at every visit.
*Check A1C every 3 months until < 7% and then at least every 6 months.
[†]Although 3 oral agents can be used, initiation and intensification of insulin therapy is preferred based on effectiveness and expense.

Nathan DM, et al. *Diabetes Care.* 2006;29:1963-1972.

Anti-Hyperglycemic Agents in Type 2 Diabetes

Class	A1C reduction	Hypoglycemia	Weight change	Dosing (times/day)
Insulin	1.5 to 2.5	Yes	Gain	1 to 4
Sulfonylureas	1.5	Yes	Gain	1
"Glinides"	1 to 1.5	Yes	Gain	3
Biguanides (metformin)	1.5	No	Neutral	2
Thiazolidinediones, "glitazones"	0.5 to 1.4	No	Gain	1
Alpha-glucosidase inhibitors	0.5 to 0.8	No	Neutral	3
Amylin-mimetics (pramlintide)	0.5 to 1.0	No	Loss	3
Incretin agonists (exenatide)	0.5 to 1.0	No	Loss	2
DPP-IV inhibitors	0.6 to 0.8	No	Neutral	1

#1. Selecting optimum interventions strategies for type 2 diabetes (18+ votes)

- Patient population – EARLY
- Interventions – comparison of agents or techniques of administration
  - Beta-cell preservation (e.g. ADA algorithm vs. metformin ± TZD ± incretin based therapy)
  - Weight (e.g. ADA algorithm vs. metformin ± incretin based therapy)
  - Speed of initiation (e.g. triple therapy versus staged therapy)

  << 2x2 factorial design >>
- Endpoint – A1C as an index of β-cell preservation; long-term extension for harder endpoints

#2. Glycemic control in the elderly (16 votes)

- Issue to be examined - Would less intense A1C management than current guideline care provide for better outcomes in elderly
- Patient population – >65 w/o microvascular complications; BP <140/80, statin/aspirin treated
    - Selected to allow for substantial numbers in protocol on just metformin therapy
- Interventions - ADA algorithm with action level at A1C 8% vs. 7%
- Endpoint – Broad (MI, CVA, revascularization, CHD, microvascular) as well as geriatric-focused (functional status, cognition, falls, bone)

#3. Bariatric surgery vs. maximal medical therapy (10 votes)

- Patient population – DM and morbid obesity meeting indications for bariatric surgery (psych, behavior, cardiopulmonary, failed medical therapy)
- Interventions –
  - Best available surgical intervention
  - Maximal medical therapy (metabolic and weight-loss)
- Endpoint – long-term health/functional status outcomes (CVD, functional status, cost, QOL)

#4. Intervention in non-ICU hospitalized patients to improve long-term outcomes (9 votes)

- Patient population – hospitalized patients, excluding those in ICU's

- Interventions – usual care vs. diabetes education plus treatment intensification

- Endpoint – 12 month post-discharge A1C; costs, QOL, self-efficacy, ...

#5. Continuous glucose sensors in type 1 diabetes

- Overarching goal: Establish utility of sensor-augmented care and closed-loop systems on intermediate term outcomes